

Utah's Mining Industry



Coal — Oil — Gas

Compared with the heyday of the energy booms of the 1970s and 80s, employment in Utah's energy resources extraction industry is a shadow of its former self. While employment in this important industry has fallen steadily over the years, actual production remains at near-record levels.

Going forward, this downward trend is likely to remain dominant in the state. However, some regional pockets of high activity will continue to exist. To get a handle on what is happening in Utah's mining industry it is necessary to look at the two major players — coal, and oil and gas, separately.

Coal

Production of coal in Utah fell to 23.1 million tons in 2003. This marked the second straight year of declining production. In line with this drop in production, employment in the industry fell by 4 percent statewide. Even with these declines, production of coal in Utah remains at near-record levels. Nevertheless, the future of the state's coal industry will be dominated by two fundamental trends: shrinking markets for Utah coal, and record high levels of labor productivity.

Markets for Utah coal are going through a series of painful changes. Utah was virtually disconnected from its foreign markets with the closing of the Los Angeles Export Terminal in 2003. This closure had the effect of reducing Utah's coal exports to overseas markets from a high of 5.5 million tons in 1996 to 222,000 tons in 2003. While in-state utilities consume roughly half of Utah's coal production, the loss of foreign markets puts additional pressure on the coal industry to reduce production.

On the flip side of the international trade equation, the domestic U.S. market for coal is in the process of opening its doors wide to

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foreign imports. The Port of Stockton in California is just one example of west coast ports making the improvements necessary to handle large bulk freighters from east Asia and the Pacific Rim. If these imports grow in volume, the increased competition may reduce the domestic market for Utah's coal.

In contrast to this trend of shrinking markets, impressive gains in labor productivity continue to breathe new life into Utah's coal industry. In 1980, each coal miner produced, on average, 5,300 tons of coal. Twenty-three years later, in 2003, that same average was up to 14,660 tons. Even with year-to-year fluctuations in productivity, the long-term trend is clearly one of increasing productivity.

With the closing of the Kaiparowits Plateau to mining operations, increased labor

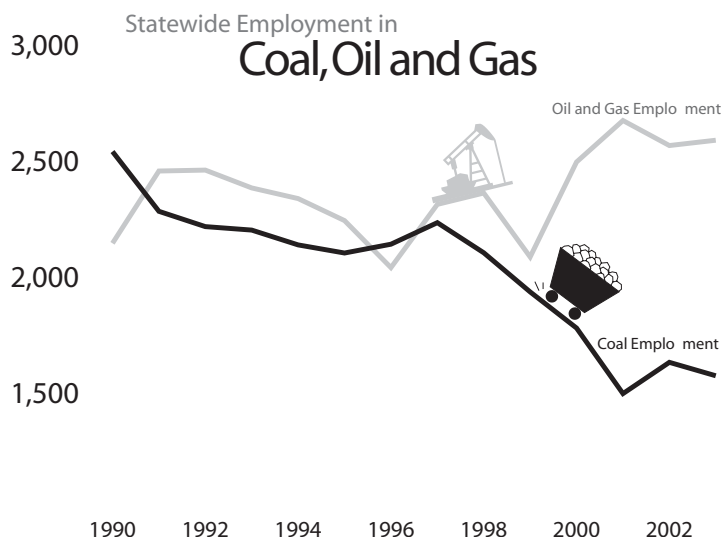
productivity will be especially important as Utah's coal industry transitions to exploiting lesser quality coal seams. Through the expanded use of longwall mining, even these seams can be exploited at a profit. So, as long as productivity increases faster than the costs associated with mining these reduced seams, coal mining will continue to be viable in the state.

The impressive gains in productivity also come with a cost. As the amount of coal produced by a single worker increases, the need for labor begins to decline. Indeed, the upward march of productivity explains, in part, why employment in the industry has steadily declined in the past decades, while at the same time, production has been sustained at near-record levels.

Oil and Gas

Activity in the oil and gas sector has gone in two separate directions. While the state has sizable reserves of oil, many of these reserves are currently unprofitable to exploit – even with oil at \$50 a barrel. For that reason, oil production in the state has steadily declined since the end of the energy boom of the 1980s.

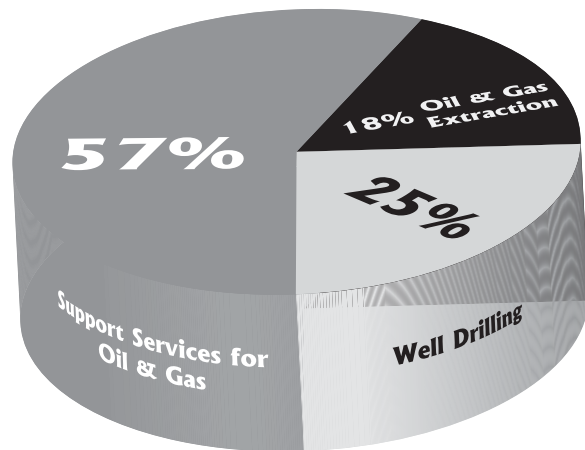
Utah's natural gas industry, on the other hand, has seen a resurgence of interest. While overall production of natural gas in the state has remained fairly flat, rising prices have increased interest in exploring Utah's reserves. These reserves are spread throughout the state in small pockets, but the most productive regions include the Uintah Basin and Carbon County. This regional split also reflects two very different gas extraction methods, which result in widely different employment patterns.



Production of natural gas in the Uintah Basin – namely Uintah and Duchesne counties – accounted for 42.9 percent of the state's total production in 2003. This gas was extracted through the use of rotary drilling. With this method, hundreds of deep wells are drilled to tap gas pockets that are deep underground. Likewise, exploration,

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which is booming at this time, also requires the drilling of many wells. So it is not surprising that 25 percent of the workers in the Basin's oil and gas industry are associated with well drilling. To put that in perspective, only 18 percent of the workers are actually involved in the extraction of oil or gas product. The bulk of employment (57 percent) in the Basin's oil and gas industry is in the support services area.



Oil, Gas, and Related Employment
in the Uintah Basin (2003)

Carbon County, normally known for its coal industry, produced 30 percent of the state's total production of natural gas in 2003. Production in the county, unlike in the Basin, is made possible through coalbed methane methods. This technique makes use of a number of wells to reduce the water pressure directly above, or within, the coalbed to induce the methane gas to rise toward the well. Employment with this technique is usually somewhat lower than with more traditional gas extraction techniques. In Carbon County in 2003 there were 98 workers in this industry, with 50 percent in actual gas extraction and another 45 percent in oil and gas services. Only 5 percent of the workforce is directly involved in well drilling.

While coalbed methane extraction appears to be less labor intensive, dealing with environmental concerns related to the process may make it more difficult to generate gas through this technique.

Outlook

Coal, oil, and gas will all likely face stiff competition in the coming decades as world resource markets become increasingly open. China is forecasted to become the world's largest exporter of coal, with the US a likely destination for these low cost exports. Likewise, as liquid natural-gas technology becomes less expensive, large-scale imports of that product may begin arriving in the US from as far afield as Qatar. These future issues add to the competitive pressures currently faced by these industries.

For coal, the biggest challenge will probably be the transition from easy-to-access, high quality coal to harder-to-extract, lower-quality coal. High worker productivity alone will help

Utah coalmines remain profitable during this period of transition. On the whole, while Utah's coal industry will likely remain productive for the near-term, employment is unlikely to increase by much (unless several more mines are brought online.)

Oil and gas extraction will remain a mixed bag. Oil production should continue to decline, as Utah's vast oil sands and shale deposits currently remain too expensive to tap. Natural gas activities, on the other hand, are likely to remain strong as high energy prices make extracting Utah's gas resources profitable. High prices at the gas wellhead will continue to drive exploration throughout the state, most noticeably in the Uintah Basin. Until this latest exploration boom fizzles, employment in this sector will likely remain robust.